

County Engineer - Water Dept.

St. Charles County

M-K FERGUSON WSSRAP LIBRARY FILE NO.+16-48

QUARTERLY REPORT

ST. CHARLES COUNTY WELL FIELD

MONITORING PROJECT

GRANT NO. DE-FG05-890R21864

Prepared by: Stanley Remington April, May and June, 1995 MONTHLY REPORT

APRIL 1995

BY

Stanley M. Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

The results of the treated water from the Weldon Spring Chemical Plant site have been received and are appended. This sample was taken on April 4, 1995. The tests show that all of the potential hazardous chemicals have been removed. All test results show that the total quantities of the parameters tested for are well below the NPDES limits. This batch was discharged into the Missouri River.

The results from well number PW-4 have been received and are appended. These samples were taken on March 16, 1995. The results are all within the historical records of past analyses.

Well number PW-5 was sampled on April 16, 1995. The results have not yet been received.

II. FUTURE PLANS

I will sample well number PW-6 and RMW-2 during mid-May.

RMW-2 will only be tested if accessibility is possible into that well. These samples will be quarterly samples wherein I will split samples with the Department of Energy and the Missouri Department of Natural Resources. Additional parameters will tested for than I normally check.

III. MISCELLANEOUS

Enclosed is the St. Charles County Water Department's Monthly Water Usage Report.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (814) 434-4570 • FAX (314) 434-0080

April 5, 1995

Stanley M. Remington 919 Broadmoor Lane St. Charles, MO 63301

RE: ATAS #12551.01

Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on March 16, 1995.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr Project Manager

Enclosures

JAC/dms

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, NO 63301

ATTN: STANLEY M. REMINGTON

REPORT: 1255101R(000)

DATE : 04-05-95

SAMPLE MATRIX : WATER ATAS EPISODE : #12551 DATE SUBMITTED: 03-16-95

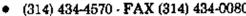
PROJECT : WELDON SPRING

CLIENT ID	ATAS ID	UNITA	RADIONUCLIDE	RESULT
PW-4	12551.01	pCi/L	GROSS ALPHA	3 +/- 2*
PW-4	12551.01	pCi/L	GROSS BETA	7 +/- 3*
PW-4	12551.01	mg/L	TOTAL URANIUM	0.009

^{*} VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 954 CONFIDENCE LEVEL, 1.960.

[&]quot; 'L= PICOCURIES PER LITER

⁼ PARTS PER MILLION(PPM)



CLIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT: 1255101X(222)

DATE : 04-05-95

SAMPLE MATRIX : WATER ATAS **#** : 12551.01 DATE SUBMITTED: 03-16-95 DATE ANALYZED : 03-18-95

METHOD REF. : SW846-8330, EPA METHODOLOGY

PROJECT : WELDON SPRING

SAMPLE ID : PW-4

	REPORTING	
EXPLOSIVE	LINIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ИD
2,4,6 TNT	6.4	ND
O-NITROTOLUENE	12.0	מא
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ИD



STANLEY M. REMINGTON

REPORT: 1255101X(222)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 04-05-95

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

ATAS 🗲 : METHOD BLANK DATE SUBMITTED: 03-16-95

DATE ANALYZED: 03-18-95

METHOD REF. : SW846-8330, EPA METHODOLOGY PROJECT : WELDON SPRING

SAMPLE ID : METHOD BLANK

	REPORTING	
EXPLOSIVE	LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ИD
O-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND



CLIENT: STANLEY M. REMINGTON

REPORT: 1255101X(222)

919 BROADMOOR LANE

DATE : 04-05-95

ST. CHARLES, MO 63301 ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

ATAS # : LABORATORY CONTROL SAMPLE

DATE SUBMITTED: 03-16-95

DATE ANALYZED : 03-17-95

METHOD REF.: SW846-8330, EPA METHODOLOGY PROJECT: WELDON SPRING SAMPLE ID: LABORATORY CONTROL SAMPLE

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND SMPL. (ug/L)	AMT. FOUND LCS (ug/L)	PERCENT RECOVERY	QC LIMITS RECOVERY
HMX	1600	ND	1629	102 %	46-151
_ RDX	1300	ND	1346	104 *	72-129
5-TNB	900	ND	936	104 🕏	74-118
ThrRYL	1650	ND	1825	111 %	58-120
1,3-DNB	475	ND	497	105 %	79-132
FINT	750	ND	788	105 %	61-145
NITROBENZENE	850	ND	904	106 %	68-135
2,6 DNT	1150	ND	1150	100 %	77-125
2,4 DNT	700	ŊD	735	105 %	70-134
o-NITROTOLUENE	1450	ND	1553	107 %	73-131
p-NITROTOLUENE	1000	ND	1068	107 %	73-116
m-NITROTOLUENE	950	ND	996	105 \$	71-127



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PAGE

CHAIN OF CUSTODY RECORD

3.60 Locoton/Temp S. S. S. S. **Tumanound Requirements** 1 to 2 working days 10 working days 15 working days Preservative codes 3 working days 5 working days ice Chemical (see below) Preservative Remarks A - none Received by Printed Name Dete/Time * OATTI Signature К Cress Type of Analysis Relinquished by: X Printed Name Date/Time Signature No. of Containers Comp derið Sample Matrix # 0d REMINGTON Auxon | 12/16/95/ Date/Time ATAS Project # Sample Time. 3/16/95/0830 KOMINGTON ST. CHARGES Sperne 9:35AM Sample Date **グラシェト**グ WELDON Form Completed By ATAS Client Name 51.42 WATER TREAM Sample ID 3/16/96 Project Name アーミル Printed Name S.M

SEND RESULTS TO (Name & Company):

Signature

B-HNOs C-HSOA D-NaOH E-HCI

TTOs (Total Toxic Organics)	TCLP BNIAE & Pest, & Herbs. 1.7	Estruction)	ZHE	TOLE MALE		Flathpoint* Corresivity, Reactivity	Metals (Sko Assessment Samples)	Metals (Wastewaler)	PCB4 ¹	PNAsi	TPH	BTEX/Volatiles ¹	Parameter		
(l) 4 oz. precleaned glass (No Headspace)	(i) 4 oz. procleaned glass	(No Hendspace)	(1) 4 oz. prechaned glass	(1) TO 02. (1)		trn[\$ ~co ∳ (1)	(1) 4 oz. glass	-	(1) 4 oz. glass	(i) 4 oz. precleared glass	(1) 4 oz. glass	(I) 4 oz. procleaned glass (No Headspace)	Type of Captainer	Soil	SAI
(2) VOA viale (HCL) and (2) 32 oz. precleaned amber glass (No Headspace)	(2) 32 oz. precienced amber glass	>0.5% (1) 32 oz. glus solids (No Headspace)	<0.5% (2) VOA viuls solids (No Headspace)	>0.5% solids (1) 1/2 gallon glass	<0.5% (1) 32 oz. glass	(1) 16 oz. plastic	(1) 32 oz. plastic (Fixeding necessary; add HNO ₂) NOTE: Amount of sample is based on amount of solids.	(I) 32 oz. plastic (HNO ₃)	(1) 32 or, proclemed amber glass	(1) 32 oz. procleaned ember glass	(1) 32 oz. glass (HCL)	(2) VOA vials (HCL) (No Headspace)	Type of Container	Water	SAMPLING PROTOCOL
(1) 32 oz. glass (No Headapace)	(1) 32 oz. glass	(No neadsbace)	(1) YOA vial	10/ 000 000	11) 72 67 434	(1) 16 oz. glass			(1) 32 oz. giass	(l) 32 oz. glass	(1) 32 oz. glass	(I) VOA vial (No Headspace)	Type of Container	Non-aqueous Fluids & Solid - Liquid Mixtures	

EXCEPTIONS

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AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

April 11, 1995

Stanley M. Remington 919 Broadmoor Lane St. Charles, MO 63301

RE: ATAS #12736.01

WSSRAP

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on April 4, 1995.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr Project Manager

Enclosures

JAC/dms

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT: 1273601R(222)

DATE : 04-11-95

SAMPLE MATRIX : WATER
ATAS EPISODE : #12736
DATE SUBMITTED: 04-04-95
DATE ANALYZED : 04-08-95
PROJECT : WSSRAP

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
NP-ESP1-040495-A-C	12736.01	pci/L	GROSS ALPHA	2 +/- 4*
NP-ESP1-040495-A-C		pci/L	GROSS BETA	13 +/- 4*
NP-ESP1-040495-A-C		mg/L	TOTAL URANIUM	<0.05

^{*} VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.960.

A= PICOCURIES PER LITER

STANLEY M. REMINGTON CLIENT:

REPORT: 1273601X(222)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 04-11-95

ATTN: STANLEY M. REMINCTON

SAMPLE MATRIX : WATER ATAS # : 12736.01 DATE SUBMITTED: 04-04-95 DATE EXTRACTED: 04-05-95 DATE ANALYZED: 04-08-95

METHOD REF. : SW846-8090(MOD), EPA METHODOLOGY PROJECT : WSSRAP SAMPLE ID : NP-EPS1-040495-A-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

REPORTING

COMPOUND	LINIT	RESULTS
2,6-DINITROTOLUENE	0.010	ND
2,4-DINITROTOLUENE	0.020	ND

OA/OC SURROGATE RECOVERY

59 % DECACHLOROBIPHENYL 79 % TETRACHLORO-M-XYLENE



CLIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT: BK0411EX(222)

DATE : 04-11-95

SAMPLE MATRIX : WATER

ATAS # : METHOD BLANK

DATE SUBMITTED: 04-04-95

DATE EXTRACTED: 04-05-95

DATE ANALYZED : 04-08-95

METHOD REF. : SW846-8090 (MOD), EPA METHODOLOGY PROJECT : WSSRAP

SAMPLE ID

: METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

REPORTING

COMPOUND	LIMIT	RESULTS
2,6-DINITROTOLUENE	0.010	ND
2,4-DINITROTOLUENE	0.020	ND

QA/QC SURROGATE RECOVERY

57 % DECACHLOROBIPHENYL 81 % TETRACHLORO-M-XYLENE

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT:

STANLEY M. REMINGTON

REPORT: QC0411EX(222)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 04-11-95

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

ATAS # : SPIKE BLANK/SPIKE BLANK DUPLICATE

DATE SUBMITTED: 04-04-95 DATE EXTRACTED: 04-05-95 DATE ANALYZED: 04-08-95 PROJECT : WSSRAP

SAMPLE ID : SPIKE BLANK/SPIKE BLANK DUPLICATE

SPIKE BLANK/SPIKE BLANK DUPLICATE RESULTS

1	SPIKE ADDED (ug/L)	AMT. FOUND BLK (ug/L)	AMT. FOUND SB (ug/L)	8B PERCENT RECOVERY
2,6-DINITROTOLUENE	0.250	ND	0.213	85 %
2,4-DINITROTOLUENE	0.250	ND	0.217	87 %

!	AMT. FOUND	SBD PERCENT	RECOVERY PERCENT
	SBD (uq/L)	RECOVERY	DIFFERENCE
2,6-DINITROTOLUENE	0.208	83 ¥	2.4 %
2,4-DINITROTOLUENE	0.208	83 ¥	

LIENT: STANLEY M. REMINGTON

REPORT: 1273601M(222)

919 BROADMOOR LANE

DATE : 04-11-95

ST. CHARLES, MO 63301 STANLEY M. REMINGTON ATTN:

SAMPLE MATRIX : WATER

ATAS # : 12736.01

DATE SUBMITTED: 04-04-95

PROJECT : WSSRAP SAMPLE ID : NP-EPS1-040495-A-C

REPORTING LIMIT	UNITS	RESULTS	AN ALYZED	METHOD REFERENCE
	INC	RGANICS		
1.0	mg/L	4.31	04-07-95	SM418B
	N	ETALS		
10.0 1.0 3.0 1.0 0.15	ug/L ug/L ug/L ug/L ug/L	ND ND ND 1.8 ND	04-07-95 04-07-95 04-07-95 04-07-95	SW 6010 SW 6010 SW 6010 SW 6010 SW 7470 SW 6010
	1.0 1.0 1.0 1.0 3.0 1.0	1.0 mg/L 10.0 ug/L 1.0 ug/L 1.0 ug/L 1.0 ug/L 1.0 ug/L 0.15 ug/L	IMIT UNITS RESULTS IMORGANICS 1.0 mg/L 4.31 METALS 10.0 ug/L ND 1.0 ug/L ND 3.0 ug/L ND 1.0 ug/L ND 1.0 ug/L ND 0.15 ug/L ND	IMORGANICS 1.0 mg/L 4.31 04-07-95 ***METALS** 10.0 ug/L ND 04-07-95 1.0 ug/L ND 04-07-95 3.0 ug/L ND 04-07-95 1.0 ug/L ND 04-07-95 1.0 ug/L ND 04-07-95 0.15 ug/L ND 04-07-95

ug/L = PARTS PER BILLION(PPB)

Tg/L = PARTS PER MILLION(PPM)

 ^{*} NOT DETECTED ABOVE REPORTING LIMIT

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 · FAX (314) 434-0080

LIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

1273601M(222) REPORT:

DATE : 04-11-95

QA/QC

<u>DESCRIPTION</u>		<u>Paraneter</u>	Results	RESULTS		
METHOD BLANK METHOD BLANK METHOD BLANK METHOD BLANK METHOD BLANK	04-07-95 04-07-95 04-07-95 04-07-95	ARSENIC CHROMIUM LEAD MANGANESE MERCURY	<10.0 <1.0 <3.0 <1.0 <0.15 <5.0	ug/L ug/L ug/L ug/L ug/L		
METHOD BLANK BLANK SPIKE	04-07-95	SELENIUM ARSENIC	104 % 99 %	ug/L RECOVERY RECOVERY		
BLANK SPIKE BLANK SPIKE BLANK SPIKE BLANK SPIKE	04-07-95 04-07-95 04-07-95 04-07-95	CHROMIUM LEAD MANGANESE MERCURY	98 % 99 % 99 % 107 %	RECOVERY RECOVERY RECOVERY RECOVERY		
BLANK SPIKE	04-07-95	SELENIUM	107 %	KECOVEKI		

CUSTODY / AUTHORIZATION FORM WELDON SPRING SITE REMEDIAL ACTION PROJECT (WSSRAP) 7295 HIGHWAY 94 SOUTH, ST. CHARLES, MO 63304 THE EPHONE (314) 441—8086 TELEX (314) 447—0803 BNVIRONMENTAL SAMPLE CLIAIN-C

Validation Documentation			1 Charles A 10	(100) 711						Exected 2.1, Resolutions 1173	eathe 11/73
WSSRAP Coutact:	e.]	LalyP.O.#:	*				:	Dept	Dept/Cost Code:		ļ
Phone Number:	Re	Requisitioner;		t. Charles	69						
Request Number:	T.	rsia to U	inte:		12	Accelerated		Priority	Urgent	[] Emergency	ency
± %	Sauple 1D	ЭÖ	Date Sampled	Matrix	Cont.	Preserv.		Pa	Parameters	SC A A SC	Arch.
NP. EPSI- OHOUGS	40495-4-6		14/da	Water	1-1 1iter	HN03	As,Cr,Hg,Mn,Se,Pb	ín, Se, Pb		12736,01	ĮZ,
	Ž				1-1 liter glass	Ice	2,4-DNT				<u> </u>
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Sample 's Signature		Checked By	Š		:		Techn	Technical Reviewer	-		
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GAN COUNTY	(Allen	4/4	4/4/95	1350							300
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AUTHORIZATION

Site Shipping Officer Oate ES&H Date Tr - F Procurement

Date

ST. CHARLES COUNTY WATER DEPARTMENT MONTHLY WATER USAGE REPORT

MONTH OF: MARCH		USAGE	-	AVG MGD		Y TO D USAGE		Y TO DATE AVG MGD
PLANT PRODUCTION	,	265710000	1	8.50	:	745880000	1	8.2 9
PLANT USE	•	8176000	•	0.20	•	36590000	:	0.41
DELIVERED TO SYSTEM	1	257534000	ı	8.30	1	709386000	1	7.88
MISSOURI CITIES WATER	ı	206618000	1	6-80	E	590831000	1	6.56
WATER DISTRICT #2 24" LINE	,	36682000	t	1.10	1	95504000		1.06
WATER DIST. #2 NEW MELLE	•	6085000	1	0.20		15840000		0.18
NATIONAL GUARD AREA	•	28000	r	0	E	49000	1	
TOTAL METER BALES	•	249413000	ı	7.90	1	702224000	•	7.80
UNMETERED AND UNACCOUNTED	:	8121000		0.20	•	8311000	1	0.09

INVENTORY OF CHEMICALS

	LIME	CHLORINE
PREV. BALANCE	+: 297726	+: 11316
RECEIVED	+: 387580	+: 16000
TOTAL	*: 685306	=: 27316
USED	-: 328163	-1 16160
BALANCE	=: 357143	=; 11156
POUNDS PER 1000 BALLONS	-: 1.23	≈: 0.061
PARTS PER MILLION	-: 148	#1 0.073
AVG. POUNDS PER DAY	= 10586	=: 521
POUNDS USED YEAR TO DAT	Em: 904047	=: 46260

DATE: 04/04/95 ALTER READINGS

COUNT #

METER TO: 03/31/95 FROM: 02/28/95 USAGED

URI CITIES BOOSTER STATION

ULTRA SONIC #1 +: 638065 - 509580 **#**1 ULTRA SONIC #2 +: 924347 -1 852895

-: 5094169 ***:** 205264000 TOTALIZER +: 5297571

ITERS BEFORE MISSOURI CITIES BOOSTER STATION

TO: 03/03/95 FROM: 01/30/95 USAGED 1. FH ANNEX 4" -ı 1175 +: 1191 § 1-50-1328350 5000 -1 189 ## £ (1-50-1328500 2. MO STATE SHED +: 194 -: 410 8000 04-50-1330000 3. DOE LAB LARGE +: 418 =: **⊭:** 501000 -: 11217 SMALL +: 11718 1-50-1330401 4. DOE FIRE LINE +: 16565 64-50-1330701 5. DOE TRAILERS +: 82 **#: 354000** -: 16211 -: **8**2 on t **=1** 81000 -: 6093 04-50-1330100 6. DDE 8" #1 LARGE+: 6174 -: 6065 œ į 6000 BMALL+1 6071 ms 10000 ~ı 1963 1-50-1330200 7. DDE 8" #2 LARGE+: 1973 8MALL+1 2443 3000 -1 2440 96 E **≠1 287000** ^4-50-1320200 8. DOE 3" **+:** 4041 -: 3754 -1 12723 **=:** 83000 +1 12806

MISSOURI CITIES TOTAL -1206618000

TOTAL

***:1354000**

R DIST. #2 24" LINE

(4-50-1328550 9. FH SCHOOL

TD: 04/01/95 FROM: 03/01/95 USAGED

+ı 201747 -: 201747 PI 24" EAST

+1 014B06 -ı 978124 **--:** 36682000 24" WEST

-: 2340 = : +: 2340 BYPASS

> WATER DIST. #2 TOTAL **=: 36682**000

NEW MELLE +: 259579 -1 253494 **■1 6085000**

MONTHLY REPORT

MAY 1995

 \mathbf{BY}

Stanley M. Remington
Consulting Hydrologist

CHEMICAL ANALYSES

The results from the sampling of well number PW-5 have been received and are appended. This sample was taken on April 18, 1995. All of the results were either non-detect or were well within the NPDES limits.

The results of the treated water from the quarry were received and are appended. This sample was taken on May 23, 1995. Again the results show the efficiency of the treating procedures. The chemical contents are all well below the NPDES limits. This batch was discharged into the Missouri River.

The results of the treated water from the chemical plant site were received and are appended. This was taken on May 15, 1995. As in the case of the quarry treated water, similar results were attained.

Two analyses for microscopic particulates (MPA) were taken by the Missouri Department of Natural Resources from wells numbered 4 and 2 taken on April 18 and April 19 respectively. The results are appended. These were taken to determine if a groundwater source is under the direct influence of surface water. No major detections were noted indicating that the wells are not affected by surface water

contamination.

Enclosed are the effluent summary sheets for the batches of water treated and discharged during the first quarter of 1995 by the U.S. Department of Energy.

II. FUTURE PLANS

Because of the flooding of the St. Charles County well field, no samples will be taken from the individual wells during June 1995. Instead, I will sample the composite, untreated well water taken at the plant site. If the well field becomes accessible by the middle of July, I will resume taking samples from the individual wells at that time. The DOE and I were originally scheduled to do the quarterly sampling on June 8, 1995. This will be postponed.

III. REPORTS

The quarterly environmental data summary for first quarter 1995 was received from the Department of Energy on May 2, 1995. Some slight increases were noted on some of the DOE observation wells near the quarry rim. These increases are attributed to the measured increases in source water concentration monitored during bulk waste disturbance in the quarry during waste removal and subsequent relatively

slow migration through water fractures from the quarry.

No permit NPDES limits were exceeded. The report is available from the St. Charles County Executive, the Department of Energy or me for anyone interested in the data.

IV. MISCELLANEOUS

The St. Charles County Water Department's Monthly Water Usage Report for the month of April 1995 is appended. The hazardous debris removal from the quarry has almost been completed. There is no longer any water in the quarry except during rainy periods. The treated water taken from the quarry on May 23, was from the heavy rains prior to May 23. Consequently the quarry will no longer be a source of contamination to the St. Charles County well field. The crevices within the quarry will all be cleaned out in the near future.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

May 16, 1995

Stanley M. Remington 919 Broadmoor Lane St. Charles, MO 63301

RE: ATAS #12840.01 Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on April 18, 1995.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr Project Manager

Enclosures

JAC/dms

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 · FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT: 1284001R(225)

DATE : 05-16-95

SAMPLE MATRIX : WATER ATAS EPISODE : #12840 DATE SUBMITTED: 04-18-95

PROJECT : WELDON SPRING

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
PW-5 PW-5	12840.01 12840.01	pci/L pci/L	GROSS ALPHA GROSS BETA	-1 +/- 3* 6 +/- 4*
PW-5	12840.01	mg/L	TOTAL URANIUM	<0.005

^{* *} VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.960.

pi L= PICOCURIES PER LITER mg/L = PARTS PER MILLION(PPM)

STANLEY M. REMINGTON CLIENT:

REPORT: 1284001X(225)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 05-16-95

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

ATAS # : 12840.01 DATE SUBMITTED: 04-18-95

DATE ANALYZED : 04-21-95

METHOD REF. : SW846-8330, EPA METHODOLOGY

PROJECT : WELDON SPRING SAMPLE ID : PW 5

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

OUANTITATION

	Rowitzrutzon	
EXPLOSIVE	LIMIT	<u>results</u>
нмх	13.0	מאָ
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	МD
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
O-NITROTOLUENE	12.0	ND
p-nitrotoluene	8.0	ND
m-NITROTOLUENE	7.9	ND

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008

TIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT:

1284001X(225)

DATE :

05-16-95

SAMPLE MATRIX : WATER

ATAS #

: METHOD BLANK

DATE SUBMITTED: 04-18-95

DATE ANALYZED : 04-21-95

METHOD REF. : SW846-8330, EPA METHODOLOGY

PROJECT : WELDON SPRING SAMPLE ID : METHOD BLANK

EXPLOSIVE	QUANTITATION <u>LIMIT</u>	RESULTS
нмх	13.0	
RDX		ND
- —	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ИD
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
O-NITROTOLUENE	12.0	ND
P-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

AS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON

REPORT: 1284001X(225)

919 BROADMOOR LANE

DATE : 05-16-95

ST. CHARLES, MO 63301 STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

ATAS #

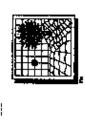
ATTN:

: LABORATORY CONTROL SAMPLE

DATE SUBMITTED: 04-18-95 DATE ANALYZED: 04-21-95

METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

СОМРОИМО	SPIKE ADDED(ug/L)	AMT. FOUND SMPL.(ug/L)	AMT. FOUND LCS(ug/L)	PERCENT	
;	2600	0	1580	99 %	
HMX	1600	ň	1320	102 %	
Buck	1300 900	ŏ	962	107 %	
5-TNB	1650	n	1800	109 %	
TETRYL	475	Õ	442	93 %	
1,3-DNB	750	Ö	786	105 %	
TNT NITROBENZENE	850	Ö	880	104 %	
2,6 DNT	1150	0	1140	99 %	
2,4 DNT	700	0	713	102 %	
O-NITROTOLUENE	1450	0	1450	100 %	
p-NITROTOLUENE	1000	0	1000	100 ዩ	
m-NITROTOLUENE	950	0	965	102 %	



AMERICAN TECHNICA... & ANALYTICAL SERVICES, Inc. 878 Feb Feb Feb Road - Mandried Heighte, MO 50043-2711 - Office | 5747-574 (214) 434-0000

ပ္ပံ

CHAIN OF CUSTODY RECORD

Preservative Table Control			Remarks				173 Feb. 1			12-14 (12-14) 2-14 (12-14)		Tumaround Requirements 1 to 2 working days	3 working days	5 working days	And the state of t	10 Working cays	15 working days	rieservauwe couess A - norse	B - HNO3 C - H2804	
	7	14	Ž, ,		X							Received by:	Signature		Printed Name		Firm		Date/Time	
P	-	of Co	5/12	メメメ								Relinquished by:	alure		Name				FIRE	
			dwoo		×	 					<u></u>		Je Sanat	_	Printed Name		E		DateTime	
		₽Q#	Sample ନ Matrix ତ	~						<u> </u>		Aggived by:		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				1430	İ	
Remineral	Project #		Sample Time	1300	Noon							A Prince of the	Signatura		Printed Name	ATAS	E ~	4/18/45	Date/Time	Component
	4		Sample Date	S6/81/h								2. J								A TO VANCE OF ST
ATAS Client Name	Project Name	Form Completed By	Sample iD	PW-S	WATER TREAT.							Reinquished by	1 f	STAN KENNETON	Printed Name	ZIII	,	4118/02 1430	Dale/Time	SEND REST TO Name & Company

Contract to the contract

E-HCH

	Non-equeous Fluids & Solid - Liquid Mixtures	Type of Container	(1) VOA vial (No Headspace)	(1) 32 oz. glass	(1) 32 oz. glass	(1) 32 oz. glass		-	(1) 16 oz. glass	***************************************	(1) 34 OC. (2)	(1) VOA vial	(No Headspace)	(1) 32 oz. glass	(1) 32 oz. glass (No Headspace)
SAMPLING PROTOCOL	Waler	Type of Container	(2) VOA vials (HCL.) (No Headspace)	(1) 32 oz. glass (HCL)	(1) 32 oz. precleaned amber glass	(1) 32 oz. precleaned amber glass	(1) 32 oz. plastic (HNO ₂)	(1) 32 oz. platic (Filtering nocessary; add HNO.) NOTE: Amount of sample is based on amount of solids.	(1) 16 oz. plastic	<0.5% solids (1) 32 oz. glass	>0.5% solids (1) 1/2 gation glass	<0.5% (2) VOA vials tolids (No Headspace)	>0.5% (1) 32 oz. glass solids (No Headspace)	(2) 32 oz. preciented amber glass	(2) VOA vials (HCL) and (2) 32 oz. proclemed amber glass (No Headspace)
SAMI	Soil	Type of Container	(1) 4 oz. precleaned glass (No Headspace)	(1) 4 oz. glasa	(1) 4 oz. precinanci glass	(1) 4 oz. glass		(1) 4 oz. glass	(1) 4 oz. glass		(1) 10 02. 81855	(1) 4 oz. precleaned glass	(Na Headspace)	(i) 4 oz. precleaned glass	(1) 4 oz. precieaned glass (No Headspace)
		Phraeter	BTEX/Volatifes!	TPH	P. &-	PCBs	Metals (Wastewater)	Metals (Site Assessment Samples)	Flathpoint Corrosivity, Reactivity		TOTAL MORTES	ZHE (Zero Head-pace	Extraction)	TCLP BN/AE & Pest. & Herbs. ^{1,3}	TFOs (Total Toxic Organics)

EXCEPTIONS

- When combining parameters for only soil, (1) 4 oz. procleaned glass container is necessary.
 When combining parameters for only soil, (1) 32 oz. glass container is necessary.
 When combining parameters for only water and other, (1) 1/2 gallon glass container is necessary.
 When combining parameters for only water and other, and recovery correction is required, (1) gallon glass container is necessary.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

May 23, 1995

Stanley M. Remington 919 Broadmoor Lane St. Charles, MO 63301

RE: ATAS #13106.01 Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on May 15, 1995.

If, in your review, you should have any questions or require additional information, please call.

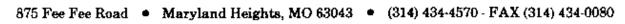
Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr Project Manager

Enclosures

JAC/pck



REPORT: 13106RA(220)

DATE : 05-23-95

ATAS

LIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

ATAS EPISODE : #13106 DATE SUBMITTED: 05-15-95

PROJECT : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
NP-EPS1-051595-C	13106.01	GROSS ALPHA	1 +/- 3*
NP-EPS1-051595-C	13106.01	GROSS BETA	13 +/- 4*
P+EPS1-051595-C	13106.01	TOTAL URANIUM (mg/L)	<0.005

VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.960.

⁼ PICOCURIES PER LITER

⁼ PARTS PER MILLION (PPM)



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CLIENT: STANLEY M. REMINGTON

REPORT: 1310601EX(220)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 05-22-95

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER
ATAS # : 13106.01
DATE SUBMITTED: 05-15-95
DATE EXTRACTED: 05-17-95
DATE ANALYZED : 05-18-95

METHOD REF. : SW846-8090, EPA METHODOLOGY

PROJECT : WELDON SPRING SAMPLE ID : NP-EPS1-051595-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

 EXPLOSIVE
 LIMIT
 RESULTS

 2,6 DNT
 0.0111
 ND

 2,4 DNT
 0.0222
 ND

OA/OC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150) 58 % TETRACHLORO-M-XYLENE(30-150) 43 %

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON

REPORT: BK0517EX(220)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 05-22-95

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

ATAS # : METHOD BLANK DATE SUBMITTED: 05-15-95 DATE EXTRACTED: 05-17-95

DATE ANALYZED: 05-18-95 METHOD REF.: SW846-8090, EPA METHODOLOGY

PROJECT : WELDON SPRING SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	reporting <u>Limit</u>	RESULTS
2,6 DNT	0.010	ND
2,4 DNT	0.020	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150) 82 % TETRACHLORO-M-XYLENE(30-150) 81 %

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

DATE : 05-22-95

REPORT: QC0517EX(220)

SAMPLE MATRIX : WATER

ATAS #

: LABORATORY CONTROL SAMPLE

DATE SUBMITTED: 05-15-95 DATE EXTRACTED: 05-17-95

DATE ANALYZED : 05-18-95

METHOD REF. : SW846-8090, EPA METHODOLOGY

PROJECT SAMPLE ID

: WELDON SPRING : LABORATORY CONTROL SAMPLE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND SMPL.(ug/L)	AMT. FOUND LCS(ug/L)	PERCENT RECOVERY	
2, F DNT	0.250	ND	0.231	92 %	
DNT	0.250	ND	0.228	91 %	

	AMT. FOUND SBD (ug/L)	PERCENT RECOVERY	PERCENT DIFFERENCE	
,6 DNT	0.174	70 %	27 %	
2,4 DNT	0.176	70 %	26 %	

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CLIENT: STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT: 1310601MT(220)

DATE : 05-22-95

SAMPLE MATRIX : WATER

ATAS # : 13106.01 DATE SUBMITTED: 05-15-95

PROJECT : WELDON SPRING SAMPLE ID : NP-EPS1-051595-C

!	PARAMETER	DET LIMIT	UNITS	RESULTS	DATE ANALYZED	meteod Reference
į			INC	ORGANICS		
	NITRATE-SPEC.	1.0	mg/L	3.98	05-19-95	SM 418B
			1	ETAL S		
	ARSENIC	10.0	$\mathtt{ug/L}$	ND	05-18-95	SW 6010
1	CHROMIUM	1.0	ug/L	ИD	05-18-95	SW 6010
1	LEAD	3.0	ug/L	ND	05-18-95	SW 6010
	MANGANESE	1.0	ug/L	1.0	05-18-95	SW 6010
į	MERCURY	0.15	ug/L	0.19	05-17-95	SW 7470
:	SELENIUM	5.0	ug/L	ND	05-18-95	SW 6010

^{·/}L = PARTS PER BILLION (PPB)

[/]L = PARTS PER MILLION (PPM)

MD - NOT DETECTED ABOVE QUANTITATION LIMIT

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT:

QC0518MT (220)

DATE : 05-22-95

QA/QC

DESCRIPTION		<u>PARAMETER</u>	<u>results</u>
METHOD BLANK METHOD BLANK METHOD BLANK METHOD BLANK METHOD BLANK METHOD BLANK	05-19-95 05-18-95 05-18-95 05-18-95 05-18-95 05-17-95	NITRATE-SPEC ARSENIC CHROMIUM LEAD MANGANESE MERCURY	<1.0 mg/L <10.0 ug/L <1.0 ug/L <3.0 ug/L <1.0 ug/L
METHOD BLANK	05-17-95	SELENIUM	<0.15 ug/L <5.0 ug/L
BLANK SPIKE BLANK SPIKE BLANK SPIKE BLANK SPIKE BLANK SPIKE ANK SPIKE	05-18-95 05-18-95 05-18-95 05-18-95 05-18-95 05-18-95	ARSENIC CHROMIUM LEAD MANGANESE MERCURY SELENIUM	107 % RECOVERY 104 % RECOVERY 111 % RECOVERY 102 % RECOVERY 83 % RECOVERY 112 % RECOVERY

CUSTODY / AUTHORIZATION FORM ENVIRONMENTAL SAMIYLE CHAIN—C CUSTODY / AUTHORIZATHO WELDON SPRING SITE REMEDIAL ACTION PROJECT (WSSRAP) 7295 HIGHWAY 94 SOUTH, ST. CHARLES, MO 63304 TELEPHONE (314) 441—8086 TELEX (314) 447—0803

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Validation Documentation								25	528 4,1,1,1, Revs, Micaba 11/91	ifedha 11/91
WSSRAP Contact:	151	Lab/P.O. #:						le:		
Phone Number:	<u>چّ</u> ا	Requisitioner:		St. Charles	les					:
Request Number:	<u>‡</u>	Turnaround Tine:	Time:	Sendard	Jard	[] Accelerated		Urgent	[] Emergency	हतात्र
# Sample 1D		ည	Date Sampled	Matrix	Cout.	Preserv.	Parameters		30.2-5418	AS Kreik CVIN)
1 NP-EPS1- 041595-C		/5	1/3	/95 Water		liter HNO3	As, Cr, Hg, Mr, Se, Pb	(3 ₍	[3,00,0)	Z
		` <u>[</u>	,		_	Ice	2,4-DNT			_
:		-			1-1 litter H2504	H2S04	NO3			
					1-4 liter	HN03	U, Cross alpha, Gross beta	ta		<u>.</u>
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		<u>.</u> .			-					<u>.</u>
		\dashv	į							
Final Son	٧	X	Univer	× (4	\.					
Sampler (S) Signature	ر :	Checked By	Ву	\cap			Technical Reviewer			
Rejinguished By Received Ba	- 55	.D	Date 1	Time	-		Renson for Transfer	Sci	Scal Intact?	Cooler
Gamison Sillianes	꿈	51/5	195	13,20				_		
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AUTHORIZATION

| a | C ES&II Date MK-P Procurement

Site Shipping Officer

Date

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

May 31, 1995

Stanley M. Remington 919 Broadmoor Lane St. Charles, MO 63301

RE: ATAS #13167.01 Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on May 23, 1995.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr Project Manager

Enclosures

JAC/dms

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

JENT: STANLEY M. REMINGTON

1316701M(227) REPORT:

919 BROADMOOR LANE

ST. CHARLES, MO 63301

05-30-95 DATE :

SAMPLE MATRIX : WATER

ATTN: STANLEY M. REMINGTON

13167.01 ATAS 🗚 DATE SUBMITTED: 05-23-95

PROJECT : WELDON SPRING SAMPLE ID : NP EPQ1-052395-C

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	method reference
		INC	RGANICS		
NITRATE	1.0	mg/L	2.95	05-25-95	SM 418B
		M	etals		
RSENIC	10.0	ug/L	ND	05-26-95	SW 6010
CHROMIUM	1.0	ug/L	ND	05-26-95	SW 6010
LEAD	3.0	ug/L	ND	05-26-95	SW 6010
MANGANESE	1.0	ug/L	11.3	05-26-95	SW 6010
MERCURY	0.15	ug/L	ND	05-26-95	SW 7470
SELENIUM	5.0	ug/L	ИD	05-26-95	SW 6010

ug/L = PARTS PER BILLION(PPB)

per/L = PARTS PER MILLION(PPM)

⁻ NOT DETECTED ABOVE REPORTING LIMIT



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CLIENT: STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT: 1316701R(227)

DATE : 05-30-95

SAMPLE MATRIX : WATER ATAS EPISODE : #13167 DATE SUBMITTED: 05-23-95

PROJECT : WELDON SPRING

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
NP-EPQ1- 052395 - C	13167.01 13167.01 13167.01	pCi/L pCi/L mg/L	GROSS ALPHA GROSS BETA TOTAL URANIUM	3 +/- 2* 11 +/- 3* 0.014

VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 95%
 CONFIDENCE LEVEL, 1.960.

C! 'L= PICOCURIES PER LITER

⁻ PARTS PER MILLION (PPM)



CLIENT: STANLEY M. REMINGTON

REPORT: 1316701X(227)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 05-30-95

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER
ATAS # : 13167.01
DATE SUBMITTED: 05-23-95
DATE EXTRACTED: 05-24-95
DATE ANALYZED : 05-30-95

METHOD REF. : SW846-8090 (MOD), EPA METHODOLOGY

PROJECT : WELDON SPRING SAMPLE ID : NP-EPQ1-052395-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

REPORTING

COMPOUND	LIMIT	RESULTS
2,6-DINITROTOLUENE	0.011	ND
2,4-DINITROTOLUENE	0.022	ND

OA/OC SURROGATE RECOVERY

DECACHLOROBIPHENYL 108 % TETRACHLORO-M-XYLENE 100 %

CLIENT:

STANLEY M. REMINGTON

REPORT: 1316701X(227)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 05-30-95

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

: METHOD BLANK ATAS 🗚 DATE SUBMITTED: 05-23-95 DATE EXTRACTED: 05-24-95

DATE ANALYZED: 05-30-95

METHOD REF. : SW846-8090 (MOD), EPA METHODOLOGY PROJECT : WELDON SPRING SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

REPORTING RESULTS LIMIT COMPOUND ND 2,6-DINITROTOLUENE 0.010 ND 2,4-DINITROTOLUENE 0.020

OA/OC SURROGATE RECOVERY

DECACHLOROBIPHENYL 79 % 84 % TETRACHLORO-M-XYLENE

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON

REPORT: QC0530EX(227)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 05-30-95

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

ATAS # : SPIKE BLANK/SPIKE BLANK DUPLICATE DATE SUBMITTED: 05-23-95

DATE EXTRACTED: 05-24-95 DATE ANALYZED: 05-30-95

PROJECT : WELDON SPRING

SAMPLE ID : SPIKE BLANK/SPIKE BLANK DUPLICATE

SPIKE BLANK/SPIKE BLANK DUPLICATE RESULTS

1	SPIKE ADDED	ANT. FOUND	AMT. FOUND	SB PERCENT
	(ug/L)	BLK (ug/L)	SB (ug/L)	RECOVERY
2,6-DINITROTOLUENE	0.250	ND	0.234	94 %
2,4-DINITROTOLUENE	0.250	ND	0.241	96 &

	AMT. FOUND SBD (ug/L)	SBD PERCENT RECOVERY	RECOVERY PERCENT DIFFERENCE
2,6-DINITROTOLUENE	0.228	91 %	3.2 %
2,4-DINITROTOLUENE	0.235	94 %	2.1 %

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

JIENT: STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301 ATTN: STANLEY M. REMINGTON

REPORT: 1316701M(227)

05-30-95

DATE

QA/QC

DESCRIPTION		<u>PARAMETER</u>	RESULTS	<u>!</u>
METHOD BLANK	05-26-95	ARSENIC	<10.0	ug/L
METHOD BLANK	05-26-95	CHROMIUM	<1.0	ug/L
METHOD BLANK	05-26-95	LEAD	<3.0	ug/L
METHOD BLANK	05-26-95	MANGANESE	<1.0	ug/L
METHOD BLANK	05-26-95	MERCURY	<0.15	ug/L
METHOD BLANK	05-26-95	SELENIUM	<5.0	ug/L
BLANK SPIKE	05-26-95	ARSENIC	107 *	RECOVERY
BLANK SPIKE	05-26-95	CHRONIUM	103 %	RECOVERY
BLANK SPIKE	05-26-95	LEAD	103 %	RECOVERY
BLANK SPIKE	05-26-95	MANGANESE	101 %	RECOVERY
BLANK SPIKE	05-26-95	MERCURY	110 %	RECOVERY
BLANK SPIKE	05-26-95	SELENIUM	109 %	RECOVERY

CUSTODY / AUTHORIZATION FORM WELDON SPRING SITE REMEDIAL ACTION PROJECT (WSSRAP) 7295 HIGHWAY 94 SOUTH, ST. CHARLES, MO 63304 TELEPHONE (314) 441-8086 TELEX (314) 447-0803 ENVIRONMENTAL SAMPLE CITAIN-C

Validation Documentation

							ĺ		ISAN 4,1,2 J, Merca, Elfordon 11/91	WI 148
WSSKAP Corriset:	Laly?.O. #:	**		;			Dei	Dent/Cust Cude:		
L'hone ivallacti	Requisitioner	tioner:	St. Charles	les			[
Request Number:	Turnaro	Turnsmetted Time;	Sundard	ned.	Accelemical	Pated	Pilority	Uncert]
Sample 1D	00	Date	Maluix	Court	l Irenia				W7	
	\dashv	-24				_		l'araigelers	AL-60-165	Arch
NK-EPQ1-052395-C	4	5/23/95	Water	1-1 liter HNO3	HNO3	As, Cr, H	As, Cr, Hg, Mn, Se. Pb		12167 11	7
	_ <u> </u> -			l-l liter glase	Ice	2.4-DNT				=
	<u> </u>				H2504	NO3				
	_			1-4 liter	HNO3	U, Gross	Gross alpha, (Gross beta		
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Sample 1 Signature		Count	4							
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XXIII MANY TO 1. B. ME-	613	1 36/se/s	1453							T
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									_	_

Charles Are

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Dale

(−F Procurement

AUTHORIZATION



P.O. Box 515 Williston, VT 05495

Phone: (802) 878-5138

Tall Free: (800) 723-4432 Fax: (802) 878-6765

May 5, 1995

Brad Ledbetter
Missouri Department of Natural Resources
Southeast Regional Office
P.O. Box 1420
Poplar Bluff, MO 63901

Dear Brad:

Enclosed please find the results of the microscopic particulate analysis (MPA) performed on the Weldon Springs TP Well #4 (95-4827) sample received in our laboratory on April 19, 1995.

Thank you for using Analytical Services for your testing needs. If you have any questions or if we can be of service in the future, please do not hesitate to contact us at 1-800-723-4432.

Sincerely,

ANALYTICAL SERVICES, INC.

Yanine M. Parsons Staff Microbiologist

JMP/kew

Enclosures

cc: Thomas Aaron (Weldon WTP)

Dan Daugherty (Missouri DNR)

Project No.: 95109-009



Data Interpretation

One sample from Missouri Department of Natural Resources was analyzed using microscopic particulate analysis (MPA). MPA is one parameter used to determine if a groundwater source is under the direct influence of surface water (GWUDI). As stated in the Guidance Manual for Compliance with the Surface Water Treatment Rule, other factors, including a site survey, review of construction records, and water quality data need to be examined carefully when making a GWUDI determination. Recent data indicate that fundamental controls on particulate movement in the ground need to be taken into account in GWUDI determinations. These include the degree of hydraulic communication (timing and amount of surface water mixed with groundwater), time of travel in the ground, and natural filtration.

This sample was characteristic of groundwater. There was a minimum amount of sediment recovered from the filter (0.5 mL in 657 gallons) and only a trace remained after flotation processing. Extremely low numbers of particulates and biological organisms were detected and none of these are exclusive to surface waters, but can be found in groundwater sources as well.

Janine M. Parsons Microbiologist

Project No.: 95109-009



REPORT: PARTICULATES, GIARDIA, AND CRYPTOSPORIDIUM

AMPLE DATA

Client:

Missouri Dept. of Natural Resources

Fifter Color:

off white

Sample No.:

95109-9

Treatment:

рове

Sample Location:

Weldon Springs TP Well #4 (95-4827)

Sediment Volume:

0.5 mL

Sampling Date:

April 18, 1995

Volume Floated:

Pellet V After Float:

اس 0.5 مسلا حسال

Date Received:

April 19, 1995

_

•

Water Type:

well

Filter.

Commercial Hoosycomb 1 µm

Volume Filtered:

657 gallons

pH:

Unknown

Turbidity:

Unknown

Type of Lovitant:

Percoll Sucrose

S.G. of Levitant:

1.15

PARTICULATE ANALYSIS

Numbers reported are per 100 gallons.

ND = None Detected

Amorphous Debris:

Fine confluent

Crustaceans:

ND

Vegetative Debris:

ND

Crustacean Parts:

ND

Distoms:

ND

Crustacean Eggs:

ND

Algae:

ND

Gastrotrichs:

ND

Rotifers:

ND

Turdigrades: Nematodes: ND ND

Rotifer Eggs:

ND ND

Nematoda Eggs:

ND

Spores: Pollen:

10

Amoebae:

ND

Invortebrate Eggs:

ND

Analyst: jp

GIARDIA AND CRYPTOSPORIDIUM

			Rosults (Expressed	per Volume Ameyed)	
Volume Amayed (sediment	Detection - Limit per		Confirmed		Unconfirmed
aquivalent)	100 Litera	Giardia Cysts	Оуранфолівінні Оосуна	Glardia Cyals	Cryptosporidism Occysts
3.9 X 10° L	0.26	None detected	None detected	None detected	None detected

Sample was processed, stained and examined using the protocol of ASTM Method P229. This method employs an immunofluorescent dual mentelenal antibody which is specific for Clardia and Cryptosporidium. Positive controls were stained and summined concurrently. Numbers are reported using significant figures.

Analyst: pe

Project No.:95109-009

SOUR! DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
FIELD SHEET AND CHAIN OF CUSTODY RECORD

COLLECTOR'S NAM	COLLECTOR'S NAME AND AFFILIATION (PLEASE PRINT)				DESCR	DESCRIPTION OF SHIPMENT		PROJECT
VAN BANDERTY,	×		₹.	NUMBER OF SAMPLES	•	ومدت		NA.JOR
MIBSONE, DNK,	MR, DEG, FOUR, SCRO		2	NUMBER OF CONTAINERS	٠	One		FIELD
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SAMPLE			COLLECTED				FIELD ANALYSES	_
NUMBER	SAMPLE DESCRIPTION	I	DATE TIME	1	ANALYSES REQUESTED	UESTED		CODE
7284-2P	Stitutus County Count, WELDON Spains TREMENT POWE, WELL #4		417-45 6:35	 	2000	\$ 3 3		34.67
	Aus 10# 607 9507	A-0-h	24,8 a.	Angelso.	سادران استار استار			3000
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CHAIN OF CUSTODY RECORD	у кесоно			IF 8HI	IF SHIPPED			<u> </u>
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	03 1436 [] U3691170		•	-				
SCALED	7		_					



County Engineer - Water Dept.

St. Charles County

May 9, 1995

Mr. Lynn Bultman Missouri American Water Co. P.O. Box 390 Cottleville, MO. 63338

Dear Mr. Bultman:

Enclosed please find the results of the Microscopic Particulate Analysis (MPA) that Missouri American requested on Well #2.

The results show the sample was characteristic of ground water.

If you have any questions or concerns, please advise.

Sincerely,

Joe R. Nichols County Engineer

e K Willol

JRN/bjb Enclosure

cc: Mr. Tom Engle, Director of Administration

LMr. Stanley M.Remington

Mr. Mike Dougherty, Alliance Resources Mr. Tom Aaron, Water Plant Supervisor



Data Interpretation

One sample from St. Charles was analyzed using microscopic particulate analysis (MPA). MPA is one parameter used to determine if a groundwater source is under the direct influence of surface water (GWUDI). As stated in the Guidance Manual for Compliance with the Surface Water Treatment Rule, other factors, including a site survey, review of construction records, and water quality data need to be examined carefully when making a GWUDI determination. Recent data indicate that fundamental controls on particulate movement in the ground need to be taken into account in GWUDI determinations. These include the degree of hydraulic communication (timing and amount of surface water mixed with groundwater), time of travel in the ground, and natural filtration.

This sample was characteristic of groundwater. There was a minimum amount of sediment recovered from the filter (1.0 mL in 513 gallons) and only a trace remained after flotation processing. Extremely low numbers of particulates and biological organisms were detected and none of these are exclusive to surface waters, but can be found in groundwater sources as well.

Janine Parsons

Staff Microbiologist

Project No.: 95088-028



REPORT: PARTICULATES, GIARDIA, AND CRYPTOSPORIDIUM

MPLE DATA

Clicat:

St. Charles County

Filter Color:

White

Sample No.:

95088-028

Treatment:

None

Sample Location:

Well #2 (PW02 March 28, 1995)

Sediment Volume:

1.0 mL

Sampling Date:

March 28, 1995

Volume Floated:

1.0 mL

Date Received:

March 29, 1995

Pellet V After Float:

10 µL

Water Type:

new/well

Filter:

Commercial Honeycomb 1 µm

Volume Filtered:

513 gallons

pH:

7.17/7.29

Turbidity:

1.0/0.86 NTU

Percoll Sucrose

Type of Levitant:

S.G. of Levitant:

1.15

PARTICULATE ANALYSIS

Numbers reported are per 100 gallons.

ND = none detected.

Amorphous Debris:

Fine confluent

Crustnecens:

ND

Vegetative Debris:

ND

Crustacean Parts:

ND

Diatoms:

ND

Crustacean Eggs:

ND

:86;

ND

Gastrotrichs:

ND

Rotifers:

ND ND

Tardigrades: Nemetodes:

ND

Rotifer Eggs: Spores:

ND

Namatode Eggs:

ND

Polien:

ND

Amoebse:

Invertebrate Eggs:

ND ND

Analyst: jp

GIARDIA AND CRYPTOSPORIDIUM

			Results (Expressed)	per Volume Assayed)	
Volume Asseyed (sediment	Detection Limit per		Confirmed		Usconfirmed
equivalent)	100 Litera	Giardia Cysts	Cryptosporidium Occysts	Glaniie Cyste	Cryptosportálnos Occysta
2.5 x 10° L	0.4	None detected	None detected	None detected	None detected

Sample was processed, stained and examined using the protocol of ASTM Method P229. This method carploys an immunofluorescent dual monoclonal antibody which is specific for Glardia and Cryptosportdian. Positive controls were stained and examined concurrently. Numbers are reported using algorificant figures.

Analyst: sh

oject No.: 95088-028



Department of Energy

Oak Ridge Operations
Weldon Spring Site
Remedial Action Project Office
7295 Highway 94 South
St. Charles, Missouri 63304

April 4, 1995

Distribution:

QUARTERLY SITE AND QUARRY WATER TREATMENT PLANT EFFLUENT DATA SUMMARY - FIRST QUARTER 1995

Enclosed please find the subject effluent data summary sheets for the batches of water treated and discharged during the first quarter of 1995. Eight batches S#047 through S#054) and three batches (Q#028 and Q#030) have been treated and discharged from the site and quarry water treatment plants, respectively.

If you have any questions, please call me or Bruce Ballew at (314) 441-8978.

Sincerely,

Stephen H. McCracken

Project Manager Weldon Spring Site

Remedial Action Project

Enclosure: As stated

cc w/o enclosure:

Martha Windsor/Geri Kountzman, MDNR

Distribution List

Larry Erickson
Division of Environmental Quality
Missouri Department of Natural
Resources
Post Office Box 176
Jefferson City, Missouri 65102

Dan Wall
Remedial Project Manager
U. S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

Stanley Remington
Consulting Hydrologist
919 Broadmoor Lane
St. Charles, Missouri 63301

Wayne Black
St. Louis County Health Department
111 South Meremac
2nd Floor
Clayton, Missouri 63105

Conn Roden
St. Louis County Health Department
111 South Meremac
2nd Floor
Clayton, Missouri 63105

Terry Gloriod
Vice President for Production
St. Louis County Water Department
535 North New Ballas
St. Louis, Missouri 63141

Dave Visintainer
City of St. Louis Water Division
Chain of Rocks Plant
10450 Riverview Drive
St. Louis, Missouri 63137

SUMMARY OF QWTP (BATCH 028) ANALYTICAL RESULTS FROM ALL AGENCIES RECEIVING SAMPLES ON 1/25/95

1/31/95 0900

					ST. CHARLES	ST. LOUIS
0404040	NPOES LIMITS	PMC DATA	MoDNR DATA	EPA DATA	LOOUNTY	COUNTY H & W
PAHAMELER	(mg/k)	HESOLIS	RESULIS	HESULTS	DATA RESULTS	DATA RESULTS
000	90/60	<20.0 mg/i		NA	ΑN	Ϋ́Υ
TSS	50/30	<12 mg/l		NA	Ā	NA AA
ARSENIC	0,1	0.0027 mg/l		NA.	ž	
CHROMIUM	0.1	0.005 mg/l		Ā	₹	
COPPER ***	1	<0.004 mg/l		AN	ΝΑ	
LEAD	0.1	<0.002 mg/t		NA	A A	
MANGANESE	0,1	0.0065 mg/l		Ϋ́	NA	
MERCURY	0.004	<0.0002 mg/l		AA	ΑN	
SELENIUM	0.02	0.0025 mg/l		AN	ΑN	
CYANIDE, AMENABLE	0.0075	1/8m 400.0>		A'A	AN	
2,4-DNT	0.22 ug/l	<0.20 ug/		NA NA	¥	
FLUORIDE	4,0	0.47 mg/l		ΝΑ	NA	
NITRATE+NITRITE AS N	+	2.9 mg/l		ž	¥.	
SULFATE	500	270 mg/l		ΑN	¥.	
CHLORIDE	*	260 mg/l		¥.	NA NA	
GROSS ALPHA	*	3.3 ± 4.2 pC//		ž	ΝΑ	2.8 ± 1.2 pC//
GROSS BETA	•	11.2 ± 4.5 pCiVI		NA	NA	8.7 ± 1.1 pCVI
URANIUM, TOTAL	4.4	2.89 ± 0.15 pCi/l		ΑA	NA	
RADIUM226 ***	*	<1.0 pC/I		N.	AN	ž
RADIUM-228 ***	•	<5.0 pC//		NA	NA	N.
THORIUM230 ***	+	<1.0 pC(f)		ΑN	¥	NA AN
THORIUM-232 ***	*	<1.0 pC(/)		NA NA	Ä	AN
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-YOA	*	N.A.	AN	ΑN	NA	ΝA
2. VOA	*	N,A,		NA	ΝΑΝ	AA
9. PCBs	*	<0.80 ug/l		Ā	AN.	ΨZ
4. PESTICIDES	*	NA.				
5. METALS/OTHERS	4	NA.				
Ha	6.0 - 9.0 S.U.	S.U. 6.28	NA	NA	NA	ΝA
* = MONITORING ONLY, NO PERMIT DI	O PERMIT DISCHAR	GELIMITS				-
** = Design Value of 30 pCi (); No	0 pCi (); Not to Exceed	seed 100 pCi/1				:
*** = Parameter required once/month.	ince/month.					
NA = Not analyzed by agency.	ıcy.					
= Data received after batch was discharged	= Data received after	er batch was dischard	pa			

SUMMARY OF QWTP (BATCH 029) ANALYTICAL RESULTS FROM ALL AGENCIES RECEIVING SAMPLES ON 2/19/95

2/21/95 0900

					ST. CHARLES	ST. LOUIS
	NPDES LIMITS	PMC DATA	Modne Data	EPA DATA	COUNTY	COUNTY H & W
PARAMETER	(J/Bm)	RESULTS	RESULTS	RESULTS	DATA RESULTS	LDATA RESULTS
COD	09 / 06	<20 mg/l		¥	¥	NA I
TSS	50/30	<12 mg/l		AN	₹	NA.
ARSENIC	1,0	<0.002 mg/l		AA	¥	
CHROMIUM	0.1	0.0032 mg/l		¥	Ā	
COPPER ***	-	<0.003 mg/l		¥	Ä	
LEAD	0.1	<0.002 mg/l		¥Z	ΑΝ	
MANGANESE	0.1	0.0081 mg/l		ž	AN.	
MERCURY	0.004	<0.0002 mg/		¥	Ϋ́	
SELENIUM	0.02	<0.003 mg/l		Ϋ́	¥	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		Ą	₹	
2,4-DNT	0.22 ug/l	<0.20 ug/l		AX.	¥	
FLUORIDE	4.0	0.31 mg/l		¥	\$	1
NITRATE+NITRITE AS N	*	1.0 mg/l		ΑN	ž	
SULFATE	2005	290 mg/l		AN.	≱	
CHLORIDE	4	170 mg/l		¥	ž	
GROSS ALPHA	#	6.7 ±4.6 pCi/l		¥N	¥	2.0 ±1.0 pC//
GROSS BETA	*	10.9 ±5.1 pCV		¥	¥	7.8 ±1.0 pC/
URANIUM, TOTAL	**	3.04 ±0.20 pCi/l		¥	¥	1.4 ±0.3 pCi/l
RADIUM-226 ***	•	<0.613 pCi/l		¥	¥N.	¥
HADIUM-228 ***	•	<1.34 pCl/		≱	¥.	NA
THORIUM-230 ***		<0.236 pCI/I		NA	NA	A'A
THORIUM-232 ***	*	<0.339 pCi/l		NA	NA	A/A
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA		N.A.	4Z	NA	NA	NA
2. VOA	*	N.A.		NA	NA NA	NA
3. PCBs	*	1/6n 09'0>		NA.	NA.	AN
4. PESTICIDES		N.A.				
5. METALS/OTHERS	+	N.A.				
На	6.0 - 9.0 S.U.	6.40	NA	NA	NA	NA
* - MONITORING ONLY, NO PERMIT DISCHARGE LIMITS	IO PERMIT DISCHAR	IGELIMITS				
** = Design Value of 30 pCi / I; Not	오	Exceed 100 pCi/I				
*** = Parameter required once/month.	once/month.		•			
NA = Not analyzed by agency.	ncy.					
	🛣 = Data received aft	ved after batch was discharged	T. II			
			1			

SUMMARY OF QWTP (BA JH 030) ANALYTICAL RESULTS FROM ALL AGENCIES RECEIVING SAMPLES ON 3/09/95

3/16/95 0900

					ST. CHARLES	ST. LOUIS
	NPDES LIMITS	PMC DATA	Modnr Data	EPA DATA	COUNTY	COUNTY H & W
PARAMETER		RESULTS	RESULTS	RESULTS	SULTS	DATA RESULTS
goo	<u>!</u>	<20 mg/l		ΝA	A'Z	NA
153	50/30	<12 mg/l		Ϋ́Х	NA	NA
ARSENIC		<0,002 mg/l		¥		
CHROMIUM	0.1	<0.003 mg/l		NA		
COPPER ***	•	<0.003 mg/l		NA		
LEAD	0.1	<0.002 mg/l		NA		
MANGANESE	0.1	l/gm 6700.0		NA.		
MERCURY	0.004			NA		
SELENIUM	0.02	0.0036 mg/l		NA		
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		ΝΑ	NA	•
2.4 DNT	0.22 ug/l	<0.20 ug/		Ϋ́		
FLUORIDE	4.0	0.22 mg/l		AN	ΝΑ	
NITRATE+NITRITE AS N	•	<0.1 mg/f		NA		
SULFATE	200	280 mg/l		NA	NA	
CHLOPIDE	*	170 mg/i		ΑΝ	W	
GPOSS ALPHA	*	0.4 ±3.3 pCi/l		NA		3.5 ±1.4 pC//
GROSS BETA		7.9 ±5.2 pCi/l		NA		7.1 ±1.0 pC//
URANIUM, TOTAL	##	1.817 ±0.10 pCW		NA		2.4 ±0.4 pC//
RADIUM-226 ***		<1.0 pCi/l		ΝA	NA	NA
RADIUM-228 ***	4	<5 pCi/l		NA	NA	NA
THORIUM-230 ***		A1 pCM		ĄN	ΝA	NA
THORIUM-232 ***	*	<1 pCi/l		NA	NA	NA
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI - VOA	•	N.A.	NA	Ϋ́	₹	Ϋ́
2. VOA	*	N.A.		ΑŅ	Ϋ́N	ΝA
3. PCBs		<0.80 ug/l		NA	NA	NA
4. PESTICIDES	+	N.A.				
S. METALS / OTHERS	4	N.A.				
H		S.U. 6.28	NA	ΝΑ	NA A	¥
		GELIMITS				
** = Design Value of 30 pCl / I; Not to	30 pCI/I; Not to Ex	Exceed 100 pCi/l				-
*** = Parameter required once/month.						
NA = Not analyzed by agency.	noy.					
	= Data received at	er batch was dischard	ed			

SUMMARY OF SWTP (BATCH 047) ANALYTICAL RESULTS From all parties receiving samples on 12/28/94

1/16/95 0830

					ST. CHARLES	ST. LOUIS
	NPDES LIMITS	PMC DATA	MODNR DATA	EPA DATA	COUNTY	COUNTY H & W
PARAMETER	(mg/)) Unless noted	RESULTS	RESULTS	RESULTS	DATA RESULTS	DATA RESULTS
COD	09 / 06	<20.0 mg/l		NA	NA	NA
TSS	50/30	<12.0 mg/l		AA	NA	NA
ARSENIC	0.1	<0,003 mg/l	~ <0.005 mg/l	NA	NA	
CHROMIUM	0.1	<0.003 mg/l		Ϋ́	ΝA	
LEAD	0.1	<0.002 mg/l		NA	NA	
MANGANESE	0.1	0.0014 mg/l	<0,020 mg#	ΝΑ	NA	
MERCURY	0.004	<0,00020 mg/l		NA	Ā	
SELENIUM	0.02	0.003 mg/		AA	Ϋ́	
CYANIDE, AMENABLE	0,0075	<0.004 mg/l		NA	NA	
2.4 DNT	0.22 ug/l	<0.20 ug/l	100 SECTION 1	NA	NA	
FLUORIDE	4.0	2.0 mg/l		NA NA	NA	
NITRATE + NITRITE AS N	20	0.41 mg/l		NA	NA	
SULFATE	500	230 mg/l		AA	NA	
CHLORIDE	•	100 mg/l		NA	NA	
GROSS ALPHA	*	1.9 ±2.9 pCt/l		NA	NA	3,1 ±1,3 pCi/
GROSS BETA	*	7.9 ±2.5 pCI/I		NA	NA	8,6 ±1,6 pCi/
URANIUM, TOTAL	**	1,903 ±0.10 pCi/l		Ϋ́	ΝΆ	<1.0 pCl/l
RADIUM 226	4	0.2 ±0.5 pCW		≱	≨	
RADIUM-228	*	6.7 ±5.0 pCl/l		₹	¥.	
THORIUM-230	•	0.0 ±0.5 pCi/i		ΝA	NA NA	AN.
THORIUM 232	*	0.0 ±0.5 pCi/i		NA	NA	¥
pH (Std. Units)	6-9	7.29		¥	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	+	¥		AA	WA	¥
2. VOA	7	¥		¥	AA A	NA NA
3. PCBs	4	<0.80 ug/l	<10 cg/1.	¥	¥.	AA A
to 1 De los of 30 policy Not	Oct / in Not	to Exceed 100 pCi/I				
*** = Monitoring parameter once per mo	Ę	Aiready analyzed this month.	nonth.			-
NA = Not Analyzed						
	The Data received after	ed after batch was discharged				

SUMMARY OF SWTP (BATCH 048) ANALYTICAL RESULTS From all parties receiving samples on 1/09/95

1/13/95 1645

					COLUMNICES	5
	NPDES LIMITS	PMC DATA	Modnr Data	EPA DATA	COUNTY	COUNTY H & W
PAGAMETER	[(mg/l) Unless noted	HESULTS	RESULTS.	RESULTS	DATA RESULTS	_
COD	09/06	16.0 mg/l		Ϋ́	NA.	⊢
133	50 / 30	<5.00 mg/l		¥	¥	ž
ARSENIC	0.1	0.0024 mg/f		ΑĀ	Y.	
CHROMIUM	0,1	<0.004 mg/l		¥	NA.	
LEAD	0.1	<0.001 mg/l		ΑN	ž	
MANGANESE	0.1	0.004 mg/i		Ā	¥	
MERCURY	0.004	<0.00020 mg/l		AN	ž	
SELENIUM	0.02	<0.001 mg/l		NA.	NA.	
CYANIDE, AMENABLE	0.0075	<0.003 mg/l		AA	Ϋ́	
2,4-DNT	0.22 ug/	<0.03 ug/l		NA NA	Ϋ́	
FLUORIDE	4.0	0.28 mg/l		AN	ž	
NITRATE + NITRITE AS N	20	0.48 mg/l		AM	ž	
SULFATE	200	417 mg/l		NA A	Ϋ́	
CHLORIDE	4	104 mg/l		NA	¥X	
GROSS ALPHA		<2.69 pCi/		¥.	¥	1.4 ± 1.1 pCi/l
GROSS BETA	•	0.42 ± 1.01 pCi/l		AN	NA NA	8.2 ±1.0 pC//
JAANIUM, TOTAL		0.284 ± 0.0068 pCi/l		AN	ž	41.0 pCl/
RADIUM-226		***		¥Z		
RADIUM-228	•	***		NA	¥	
HORIUM-230	*	कंडिक		NA	¥	¥
THORIUM-232		***		NA	Ž	ž
PH (Std. Units)	6-9	8.24		ΑN	¥	
PRIORITY POLLUTANTS	(SEE BELOW)					
SEMI-VOA	•	NA		¥	Ž	¥
2.VOA	4	NA		ΝA	NA	Ϋ́
a. PCBs	+	<0.20 ug/l		NA	AX	AA
 Monitoring Parameter 	oter					
** ** Design Value of 30 pCi / i; Not to		Exceed 100 pCi / I				
*** = Monitoring parameter once per mont	£	Already ensigned this month.	onth.			:
NA = Not Analyzed			!			
	The Party Constitution of the Party of the P	The state of the s				

SUMMARY OF SWTP (BATCH 049) ANALYTICAL RESULTS From all parties receiving samples on 1/18/95

1/23/95 1045

					ST. CHARLES	ST. LOUIS
	NPDES LIMITS	PMC DATA	MoDNR DATA	EPA DATA	∑UNT?	COUNTY H & W
PARAMETER	(mg/l) Unless noted	RESULTS	RESULTS	HESULTS	DATA RESULTS	DATA RESULTS
GO	09/06	<20.0 mg/l		NA	AA	NA
TSS	50/30	<12 mg/l		NA	NA	NA
ARSENIC	0.1	<0.002 mg/l		Ā	<0.010 mg/l	
CHROMIUM	0.1	<0.003 mg/l		NA	<0.001 mg/l	
LEAD	0,1	<0.002 mg/l		AN	<0.003 mg/l	
MANGANESE	1.0	0.0012 mg/l		A'A	<0.001 mg/l	
MERCURY	0,004	<0.0002 mg/l		¥	<0.00015mg/l	
SELENIUM	0.02	<0.002 mg/l		ž	<0.005 mg/	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		¥	NA	•
2,4-DNT	0.22 ug/l	<0.20 mg/l		¥	<0.0222 ug/l	
FLUORIDE	4,0	1.8 mg/		₹	ΨX	
NITRATE + NITRITE AS N	20	0,37 mg/l		NA	ΑN	
SULFATE	500	180 mg/l		Ä	¥	
CHLORIDE	ų.	150 mg/l		ĄN	ΨV	
GROSS ALPHA	•	1.5 ±2.2 pCM		Ž	4 ±3 pC//	2.2 ±1.2 pCl/l
GROSS BETA		10.2 ±2.8 pCi/		ΑĀ	10 ±4 pCi/	8.2 ±1.0 pC//
URANIUM, TOTAL	4.4	0.188 ±0.013 pC//		ΑN	<3.4 pCVI	A1.0 DOM
PADIUM-226	•	444		NA NA	ΨX	
PADIUM-228		444		AN	AN	
THORIUM-230	*	171		Ą	NA	Ą
THORIUM-232	4	7 N P		AN	AN	Ϋ́
pH (Std. Units)	519	6.82		AN.	AN	
PRIORITY POLLUTANTS****	(SEE BELOW)					
1. SEMI-VOA	•	<50.0 ug/l		ΝA	NA	ΝΑ
2. VOA	*	<20.0 ug/l		AA	Ā	ΝΑ
3. PCBs / PESTICIDES	*	<1 ug/l / <5 ug/l		NA	N.	NA
4. METALS/OTHERS	· •	ابين				
* = Monitoring Parameter						
	31/1; Not to Exceed 100	a pci/i				
*** = Monitoring parameter once per month.		Already analyzed this month.				
**** = Required Annually						
NA = Not Analyzed						
NOTE 1: 30.0 ug/l fron; 7.9 ug/l Zinc; 0.016	g/l Zinc: 0.016 Phenols (Total)	(Total). All others no	All others non-detectable.	·		
	🎕 = Data received after batch was discharged	zatch was discharged				
				: 1		

SUMMARY OF SWTP (BATCH 050) ANALYTICAL RESULTS From all parties receiving samples on 1/30/95

2/3/95 1045

					OT CUADICE	in C
	NPDES LIMITS	_	Modnh Data	EPA DATA	٠ō	COUNTY H & W
AMETER	(mg/l) Unless noted	RESULTS	RESULTS	RESULTS	DATA RESULTS	DATA RESULTS
	80 / 60	<20 mg/l		¥.	Ϋ́N	NA
	50/30		-	ΑΝ	Ϋ́	¥
	0.1			NA NA	Ä	
CHROMIUM	0.1	l/gm e00.0>		Ϋ́	Ą	
LEAD	0.1	<0.002 mg/l		NA.	¥	
MANGANESE	0.1	<0.002 mg/l		NA.	NA.	
MERCURY	0.004	<0.0002 mg/l		NA.	ΝA	
SELENIUM	0,02	<0.002 mg/l		AN AN	άŽ	
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		Ą	NA.	
2,4-DNT	0.22 ug/i	<0.20 ug/		AN.	ΔN	
FLUORIDE	4.0	2,2 mg/l		Ą	ΔN	
NITRATE + NITRITE AS N	202	0.60 mg/l		AN.	QN.	
SULFATE	500	220 mg/l		NA	47	
CHLORIDE	•	130 mg/		AN AN	2 2	
GROSS ALPHA	1	10+17 PCM		MA	2	
GPOSS BETA	*			Y 14	¥N.	Z.1 ±1.2 pC//
IIBANIIM TOTAL	**	1.0 ± 2.1 0.0		ž	AN.	6.8 ±1.0 pCi/
CI COLONIA COLO		0.235 ±0.013 pC//		ž	Ϋ́	1.0 pC∰
HADIUM 226	*	\ <u>\</u>		¥	Ϋ́	
HADJUM-228	*	<5 pCi/		¥	Ä	
THORIUM-230	*	<1 pCi/l		NA	ž	NA
THORIUM-232	+	√1 pCi/l		NA.	Ϋ́	AM
pH (Std. Units)	6-3	6.39		W	¥N.	
PRIORITY POLLUTANTS****	(SEE BELOW)					
1. SEMIVOA	*	A.A.		NA NA	ΑΝ	AN.
2. VOA		NA		¥	¥	NA
3. PCBs	*	<0.80 ug/l		AM	ΨN	N.A
4. METALS/OTHERS	*	Ž				
l						
п	1/1; Not to Exceed 100	/ Da o				
*** = Monitoring parameter once per month.	per month. Already	Already analyzed this month.				
DAZYIMIYON - AN						
- Date seem	Total secondary of the					
	" Daig Jecelyed aller s	ved after outch was discharged				

SUMMARY OF SWTP (BATCH 051) ANALYTICAL RESULTS From all parties receiving samples on 2/9/95

2/15/95 1315

					ST. CHARLES	ST. LOUIS
	NPDES LIMITS	PMC DATA	MoDNR DATA	EPA DATA	COUNTY	COUNTY H & W
PAHAMETER COD	I (mg/i) Uniess noted	HEBUL IS	HESOLIS	MESUL IS	DATA HESULIS	DATA HESULIS
	30 00	720 III 9/1		Y.	¥.	£
TSS	50 / 30	<12 mg/l		NA	NA	NA
ARSENIC	0.1	<0.002 mg/l		AA	¥	
CHROMIUM	0,1	<0.003 mg/l		NA	Ϋ́	
LEAD.	0.1	<0.002 mg/l		AN	AA	
MANGANESE	0.1	0.0026 mg/l		N	ž	
MERCURY	0.004	0.00042 mg/l		Ϋ́	AA	
SELENIUM	0.02	<0.003 mg/l		Ϋ́	A'A	
CYANIDE, AMENABLE	0,0075	<0.005 mg/l		ΑΝ	ĄN	•
2,4-DNT	0.22 ug/l	<0.20 ug/l		NA NA	¥	
FLUORIDE	4.0	1.9 mg/l		άN	ΝA	
NITRATE + NITRITE AS N	80	0.54 mg/l		AN.	ΝA	
SULFATE	200	200 mg/l		AN	ΑN	
CHLORIDE	*	110 mg/l		¥Z	¥Z	
GROSS ALPHA	*	0.2 ± 2.1 pCVI		ΑΧ	NA.	1.7 ±1.0 pCi/
GPOSS BETA	•	6,1 ± 2.5 pCUI		ΝΑ	ΥN	8.6 ±1.0 pCi/l
URANIUM, TOTAL	**	0.451 ± 0.040 pCl/l		¥	≨	×1.0 PO∰
PADIUM-226		***		Ϋ́N	¥	
PADIUM-228	*	7*7		¥	ΑN	
THORIUM-230	4	***		¥	¥	¥
THORIUM~232	7	444		≨	AN	¥
pH (Std. Units)	6-9	6.07		ž	AM	
PRIORITY POLLUTANTS****	(SEE BELOW)					
1. SEMI~VOA		NA		NA	NA	NA
2. VOA	*	NA		¥	ΑN	¥
3, PCBs	*	/50 08'0>		Ą	¥	ΑĀ
4. METALS/OTHERS	*	NA				
* = Monitoring Parameter						
** = Design Value of 30 pCI/I; Not to Exceed 100 pCI/I	3/1; Not to Exceed 10	0 pC!/!				
*** = Monitoring parameter once per month.	ice per month, Already	Already analyzed this month.				
	ΙI					
NA = Not Analyzed						
				:		
Act to the second of the batch was discharged.	🌋 = Data received after !	gatch was discharged				

SUMMARY OF SWTP (BATCH 052) ANALYTICAL RESULTS From all parties receiving samples on 2/24/95

3/3/95 1445

					ST. CHARLES	ST. LOUIS
AMETER	MPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	Modnr Data Besiii Ts	EPA DATA	COUNTY	COUNTY H& W
	90/80	ľ		NA NA	NA NESOLES	DATA RESULTS
TSS	50/30			NAN	42	Y Y
	0.1	ľ		NA.	47	2
CHROMICM	0.1	<0,003 mg/l		NA NA	AN	
LEAD	0.1	<0.002 mg/l	•	¥Z	NA	
MANGANESE	0.1	0.0012:mg/l		¥	AN A	
MERCURY	0.004	<0.0002 mg/l		¥	NA.	
SELENIUM	0.02	<0.003 mg/l	·	Ą	AN AN	
CYANIDE, AMENABLE	0,0075	0.0052 mg/l		¥	4N	
2,4-DNT	0.22 ug/	<0.20 ug/l		Ϋ́	AM	
FLUORIDE	4.0	2.0 mg/i		¥	4N	
NITRATE + NITRITE AS N	20	3.1 mg/l		Ą	Ā	
SULFATE	500	250 mg/l		¥	¥	
CHLORIDE	#	170 mg/l		Ą	4N	
GROSS ALPHA	+	3.4 ± 3.4 DCM		¥.	¥ ¥	11000
GROSS BETA	*	18.8 ± 4.1 pCi/l		NA N	2 2	10 2 1 1 2 Oct
URANIUM, TOTAL	**	0.826 ± 0.047 pCi/l		NA	5 2	2010 H 76
RADIUM-226	•	***	•	NA	5 2	2 2
RADIUM-226	*	***		5 2	£ 1	
THORIUM-230	*	444		Y N	\$ 2	AIA
THORIUM-232	•	+ + +		N/A	2	W. V.
pH (Std. Units)	6-9	6.34		AN.	412	44
PRIORITY POLLUTANTS****	(SEE BELOW)				Ç	
1. SEMI-VOA	*	¥		ΑΝ	NAN NA	4V
2. VOA	4	¥N.		AN N	Ą	ΔM
3. PCBe	•	<0.80 ug/l	•	NA.	4Z	ν
4. METAL S/OTHERS		¥				5
 Aonitoring Perameter 						
II.	ii/i; Not to Exceed 100 pCi/	0 pCi/1				
*** = Monitoring parameter once per month.	: 1	Already snalyzed this month.				
1						
NA = Not Analyzed						
	20					
E Daid received after batch was discharged	8 = Dala received affer to	atch was discharged				

SUMMARY OF SWTP (BA H 053) ANALYTICAL RESULTS From all parties receiving samples on 3/8/95

3/16/95 0835

PARAMETER			
Maile Second Se	BESU: TS	COUNTY	COUNTY H & W
Main So 30 < 12 mg/l	×		NAN
M	ž		NA NA
SEE	AN		
ESE	AN AN	A.	
NITRITE AS N	NA	×	
V 0.004 0.0020 mg/l M 0.02 0.0043 mg/l AMENABLE 0.022 ug/l <0.005 E <0.22 ug/l <0.0043 mg/l + NITRITE AS N 20 0.29 mg/l E HA * 1.1 ±2.3 pC/l E TA * 1.20 mg/l E TA * <1.1 ±2.3 pC/l ETA * <1.20 mg/l LPHA * 1.1 ±2.3 pC/l ETA * <1.20 mg/l LPHA * <1.20 mg/l LPHA * <1.20 mg/l LPHA * <1.20 mg/l LPHA * <1.0 mg/l -236 mg/l * <1.0 mg/l L-230 mg/l * <1.0 mg/l L-230 mg/l * <1.0 mg/l VOA *	Ϋ́	NA NA	
AMENABLE	άN	WA	
AMENABLE	¥Z	ΝΑ	
E	¥Z	¥	
DE	ΨŽ	NA	
E + NITRITE AS N	Ϋ́Z	NA	-
FE S00 290 mg/l DE ALPHA ALPHA ALPHA ALPHA ALPHA BETA	¥N.	NA.	
DE	₹Z	NA NA	
ALPHA	₹	AN AN	
BETA	AN AN	NA	98 +1 9 mCil
## TOTAL #-228 *** #-228 *** #-228 *** #-228 *** #-228 *** #-228 *** #-228 *** #-220 *** #-230 *	YN.	AN AN	11.1 +1.1 pC/s
# - 226 *** # - 228 *** # - 228 *** # - 228 *** # - 230 *** # - 230 *** # - 25 pC/II # - 21 p	AN	¥	<10 PCM
## - 228 ***	¥	AN A	444
M = 230 ***	N Z	NA	
MA – 292 *** < T pCVII d. Units) 6 – 9 7.19 DY POLLUTANTS**** (SEE BELOW) NA -VOA NA NA AS/OTHERS NA NA Monitoring Parameter NA NA Monitoring parameter once per month. Not to Exceed 100 pCi / I	AN.	¥	NA
d. Units) 6 - 9 7.19 POLLUTANTS**** (SEE BELOW) NA -VOA NA NA Monitoring Parameter NA NA Monitoring Parameter NA NA Monitoring parameter once per month. Not to Exceed 100 pCi / I	AZ.	NA.	MA
YOLLUTANTS**** (SEE BELOW)	₩Z	ΨŽ	
-VOA NA			
Monitoring Parameter Monitoring parameter once per month. Not Analyzed	AN.	ž	NA NA
LS/OTHERS Moniforing Parameter Jesign Value of 30 pCi / i; Not to Exceed 100 pCi / I Vionitoring parameter once per month.	YZ		¥
arameter a of 30 pCi / i; Not to Exceed 100 pCi / i staneter once per month.	₩.	AN	AM
= Monitoring Parameter = Design Value of 30 pCi / i. Not to Exceed 100 = Monitoring parameter once per month. = Not Analyzed			
= Design Value of 30 pCi / i. Not to Exceed 100 = Monitoring parameter once per month. = Not Analyzed			
= Monitoring parameter once per month. = Not Analyzed			
= Data received after batch was discharged			

SUMMARY OF SWTP (BATCH 054) ANALYTICAL RESULTS From all parties receiving samples on 3/17/95

3/22/95 0835

					ST. CHARLES	ST. LOUIS
	NPDES LIMITS	PMC DATA	Modnr Data	EPA DATA	TINOO	
PARAMETER	(mg/l) Unless noted	RESULTS	RESULTS	RESULTS	DATA RESULTS	DATA RESULTS
COD	09/06	<5.0 mg/l		NA	ΝA	NA
TSS	50/30	4,0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.007 mg/l		NA	ΨZ	
CHROMIUM	0.1	<0.003 mg/l		NA	¥	
LEAD	0.1	<0.00280 mg/l		ΑĀ	AA	
MANGANESE	0,1	0.00292 mg/l		AN	AN	
MERCURY	0.004	<0.0001 mg/		NA	Ą	
SELENIOM	0.02	<0.0049 mg/		¥	¥	
CYANIDE, AMENABLE	0.0075	<0.004 mg/i		AN	ΑΝ	
2,4-DNT	0.22 Ug/l	<0.022 ug/l		AA	NA	
FLUORIDE	4.0	1.59 mg/l		AA	AN	
NITRATE + NITRITE AS N	20	0.811 mg/l		AM	N.	
SULFATE	200	256 mg/l		¥	NA.	
CHLORIDE	*	93.2 mg/l		¥	ΑN	
GROSS ALPHA	•	<2.92 pCi/l		¥.	N.	2.7 ±1.1 pCi/f
GROSS BETA	•	6.7 ±1.54 pC//		NA	Ą	9.0 ±1.2 pCi/l
URANIUM, TOTAL	**	0.453 ±0.519 pCi/		NA	AN	A1.0 PCid
RADIUM-226 ***	*	***		¥	ΨV	
RADIUM-226 ***	•	***		NA	¥	•
	•	***		AN	¥	¥
THORIUM-232 ***	•	444		¥	ΝA	ΑΝ
pH (Std. Units)	6-9	8.04		AN AN	¥	
PRIORITY POLLUTANTS****	(SEE BELOW)					
1. SEMI-VOA		AN		ΝΑ	¥	NA
2. VOA	•	NA		NA	¥	Ą
3. PCBs		/50.21 ug/l		¥	¥	¥Z
4. METALS/OTHERS		NA				
* = Monitoring Parameter						
** = Design Value of 30 pCi / i; Not to Exceed 100 pCi /	1/1; Not to Exceed 10	0 pCi/!				
*** = Monitoring parameter once per month.	ŀ	Aiready sampled this month.				
NA = Not Analyzed						
econ state		ved after hatch was discharged				

ST. CHARLES COUNTY WATER DEPARTMENT MONTHLY WATER USAGE REPORT

MONTH	OFa	APRIL
-------	-----	-------

		USAGED		AVG MGD	`	U OF		AVIG MGD
PLANT PRODUCTION	:	269177000			ı	1015057000		
PLANT USE	1	8148000	t	0.20	•	44738000	E	0.372
DELIVERED TO SYSTEM	1	261029000	:	8.70	1	970415000	:	8.086
MISSOURI CITIES WATER	:	195518000	:	6.50	r	786349000	1	6.553
WATER DISTRICT #2 24" LINE	\$	45625000	:	1.50	ı	141129000	:	1.176
WATER DIST. #2 NEW MELLE	1	6204 000	t	9.20	•	22080 000		0.184
NATIONAL GUARD AREA	*	91000	*	0	1	140000	=	
TOTAL METER SALES	ı	247474000	•	8.20	:	949698000	•	7.914
UNMETERED AND UNACCOUNTED	ł	13555000		0.40	:	21866000		0.182

INVENTORY OF CHEMICALS

	Lİ	ME	CH	LORINE
PREV. BALANCE	+;	357843	+1	11156
RECEIVED	+ :	288320	+1	16000
TOTAL	=;	646163	* :	27156
USED	-1	355566	~!	17215
BALANCE	-;	290597	wj	9941
POUNDS PER 1000 GALLONS	=1	1.32	= ;	0.064
PARTS PER MILLION	=1	152	*:	7.42
AVG. POUNDS PER DAY	* :	11852	= t	574
POUNDS USED YEAR TO DATE	E=:	1259613	** ‡	63475

IETER READINGS

1000UNT # METER TO: 04/28/95 FROM: 03/31/95 USAGED

"OURI CITIES BOOSTER STATION

ULTRA BONIC #1 +1 ULTRA SONIC #2 +:

TOTALIZER +: 5491231 -: 5297571 =: 19366000

			~	•			* *****	•
IETERS BEFÖRE	iissouri cities 800	STE	R STATION					
Region of the second	The Mark State		TO: 04/03/9	95 FI	ROM: 03/02/9	95 U	SAGED	
_# 74-50-1326350 -	1. FH ANNEX 4"	+1	1177	-:	1191	=1		
14-50-1328500	2. MO STATE SHED	+±	199	-1	194	-:	5000	
*V4-50-1330000	3. DOE LAB LARGE	+:	430	-1	418	= ;	12000	
	SMALL	+ 6	12425	-1	11718	= ‡	707000	
14-50-1330401	44 DOE FIRE LINE	_	17404	-1	16565	= ;	B39000	
)4-50-1330701 ·				-1	82	u 2		
.04+50-1330100	6. DOE 8" #1 LARG	E+:	6264	-1	6174	m t	90000	
1 1	SMALI			-1	6071	m1	29000	
>4-50-133 0 200	7. DUE 6" #2 LARG	E+£	2029	-1	1973	1	56000	
199	BMAL			-1	2443	m (37000	
04~50-1320200	8. DOE 3"	+:	3799	-1	4041	— t	•	•
4-50-1328550	9. FH SCHOOL	+1	12889	-;	12806	=1	B3000	

MISSOURI CITIES TOTAL =: 195518000

TOTAL

***:** 1858000

R DIST. #2 24" LINE

TO: 05/ /95 FROM: 04/01/95 USAGED 24" EAST +: 201747 -: 201747 =: 24" WEST +1 .60431 -1 14806 =: 45625 +: 2340 BYPASS -: 2340 - 5

> WATER DIST. #2 TOTAL **≖**₁ 45625

NEW MELLE +1 265819 -1 259579 =1 6240 MONTHLY REPORT

JUNE 1995

BY

Stanley M. Remington

Consulting Hydrologist

CHEMICAL ANALYSES

The results from sampling well PW-9 was received and is appended. This well was sampled on May 18, 1995, one day before the well field was flooded. All parameters are within historical ranges and are well below the NPDES limits.

Because of the flooding it was not possible to sample any of the wells during June, 1995. Instead I sampled the composite of all of the wells before the water was treated. This was done on June 15, 1995. The results have not yet been received. No treated water samples from either the quarry or chemical plant site were taken for the month of June. The quarry is almost dry.

II. REPORTS

A 238+ page report was received during June 1995 from the Department of Energy. The name of the report is "Weldon Spring Site Environmental Report for Calendar Year 1994."

It was published in May 1995. The report was prepared to provide information about the public safety and environmental protection programs conducted by the Weldon Spring Site Remedial Action Project (WSSRAP).

The report summarized the data from the environmental monitoring program, characterized trends and environmental conditions at the site and confirms compliance with environmental and health protection standards and requirements.

The report covers Dose Estimates, Air Monitoring, NPDES
Monitoring covering Surface Water, Groundwater, Biological
and Air Monitoring. Very few changes were detected from
the previous year. Mostly increases in radiological parameters were noted along the north side of the Femme Osage
Slough, where one would expect them because of the southward
flow of the contaminated groudwater from the quarry. As
in the past, the radiological contaminants have not crossed
over from the slough. This is due to several factors,
mostly geological.

The report is too lengthy to go into detail, but it is available to anyone wishing to read it from the Department of Energy, St. Charles County, St. Charles County Library or me.

III. <u>FUTURE PLANS</u>

Providing the flood recedes sufficiently to drive to the wells, I will sample on of the pumping wells during the latter part of June 1995. I will attend the annual Missouri

Waste Management Conference in Columbia, Missouri from July 16 - 18, 1995.

IV. MISCELLANEOUS

The quarry has been cleaned out except to the fractures and joints in the limestone. It is difficult to predict when the floods will end at the well site. As long as the levee is breached there is no protection against any flooding.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

June 16, 1995

Stanley M. Remington 919 Broadmoor Lane St. Charles, MO 63301

RE: ATAS #13136.01 Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on May 18, 1995.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr Project Manager

Enclosures

JAC/dms

STANLEY M. REMINGTON CLIENT:

REPORT: 1313601X(227)

919 BROADMOOR LANE

ST. CHARLES, MO 63301

DATE : 06-16-95

ND

ND

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER ATAS # : 13136.01 DATE SUBMITTED: 05-18-95 DATE ANALYZED: 05-25-95
METHOD REF.: SW846-8330, EPA METHODOLOGY
PROJECT: WELDON SPRING
SAMPLE ID: PW-9

O-NITROTOLUENE

P-NITROTOLUENE

m-NITROTOLUENE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	LIMIT	<u>results</u>
нмх	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	מא
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ДŊ
O-NITROTOLUENE	12.0	ND

OHANTITATION

8.0

7.9



CLIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT: 1313601X(227)

DATE : 06-16-95

SAMPLE MATRIX : WATER

: METHOD BLANK ATAS #

DATE SUBMITTED: 05-18-95

DATE ANALYZED : 05-25-95

METHOD REF. : SW846-8330, EPA METHODOLOGY

PROJECT SAMPLE ID

: WELDON SPRING : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	<u>results</u>
		170
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	מאַ
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ЙD
O-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	МD
m-NITROTOLUENE	7.9	ND

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

STANLEY M. REMINGTON CLIENT:

REPORT: 1313601X(227)

DATE : 06-16-95

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER

: LABORATORY CONTROL SAMPLE ATAS 🗚

DATE SUBMITTED: 05-18-95

DATE ANALYZED: 05-24-95
METHOD REF.: SW846-8330, EPA METHODOLOGY
PROJECT: WELDON SPRING
SAMPLE ID: LABORATORY CONTROL SAMPLE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND SMPL. (ug/L)	AMT. FOUND LCS (ug/L)	PERCENT RECOVERY	
Incu	1500	0	1820	114 %	
_HMX _RDX	1600 1300	0	1390	107 %	
2 5-TNB	900	n	968	108 %	
TALRYL	1650	ŏ	1810	110 %	
1,3-DNB	475	Ō	461	97 %	
FINT	750	Ö	800	107 %	
NITROBENZENE	850	0	873	103 %	
2,6 DNT	1150	0	1090	95 ફ	
.2,4 DNT	700	0	706	101 %	
o-NITROTOLUENE	1450	0	1610	111 %	
P-NITROTOLUENE	1000	0	1050	105 %	
m-NITROTOLUENE	950	0	1030	108 %	

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT:

STANLEY M. REMINGTON

919 BROADMOOR LANE

ST. CHARLES, MO 63301

ATTN: STANLEY M. REMINGTON

REPORT: 1313601R(227)

DATE : 06-16-95

SAMPLE MATRIX : WATER ATAS EPISODE : #13136 DATE SUBMITTED: 05-18-95

: WELDON SPRING PROJECT

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
PW-9	13136.01	pci/L	GROSS ALPHA	5 +/- 4*
PW-9	13136.01	pCi/L	GROSS BETA	9 +/- 5*
■ PW-9	13136.01	mg/L	TOTAL URANIUM	0.011

^{*} VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.960.

>= PICOCURIES PER LITER

Q, _ = PARTS PER MILLION(PPM)



AMERICAN TECHNIC .. & ANALYTICAL SERVICES, Inc. 876 Fee Free Float - Maryland Hullyma, NO 8300-5221 - Office 614), 434-4520 - FAX (214), 434-4500 -

CHAIN OF CUSTODY RECORD

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ST. CHARLES COUNTY WATER DEPARTMENT MONTHLY WATER USAGE REPORT

	. 36 YAM ±30 HT⊾ H		USAGED	AVG (IDM	•	ע סד ץ	AVG MGD
`	PLANT PRODUCTION	ı	297936000	19.610	•	1312993000	:8.695
	PLANT USE	•	9726000	10.310	1	54464000	10.360
:	DELIVERED TO SYSTEM	1	288210000	19.300	1	1248625000	:8.335
i							
	MISSOURI CITIES WATER	1	228832000	17.380	£	10151B1000	16.723
	WATER DISTRICT #2 24" LINE	1	51415000	11.650	:	192544000	11.275
	WATER DIST. #2 NEW MELLE	t	7340000	10.230	1	29420000	10.195
	NATIONAL GUARD AREA	t	62000	ı ,0	1	202000	:
	TOTAL METER SALES	1	287649000	19.270	1	1237347000	€8.194
	UNMETERED AND UNACCOUNTED	ı	561000	10.020	ŧ	22427000	10,148

INVENTORY OF CHEMICALS

	LIME	CHLORINE
PREV. BALANCE	+1 290597	+: 9940
RECEIVED	+: 392280	+: 16000
TOTAL	≈; 682877	=: 259 40
USED	-r 370553	-# 18260
BALANCE	=: 312324	≈₁ 768 0
POUNDS PER 1000 GALLONS	=1 1.24	*) 0.061
PARTS PER MILLION	=1 149	=1 7.35
AVG. POUNDS PER DAY	=1 11953	=: 589
POUNDS USED YEAR TO DATE	E=1 1630166	#r 81735

TO: 5/31/95 FROM: 4/28/95 USAGED -: = : -1 =: TOTALIZER +: 5718604 -: 5491231 =: 227373000 ETERS BEFORE MISSOURI CITIES BOOSTER STATION TO: 5/03/95 FROM: 4/3/95 USAGED 1. FH ANNEX 4" +: 1178 -: 1177 Ω4-50-13**2835**0 **=:** 1000 4-50-1328500 2. MD STATE BHED +: 202 4-50-1330000 3. DOE LAB LARGE +: 450 m 1 -r 199 3000 -: 430 **=:** 20000 SMALL +: 13002 -1 12425 **≠:** 577000 4-50-1330401 4. DOE FIRE LINE +: 18127 **=:** 723000 -1 17404 4-50-1330701 5. DOE TRAILERS +: 82 04-50-1330100 6. DDE 8" #1 LARGE+: -J 82 =1 -1 6264 **m**1 SMALL+: **-: 610**0 **#** 5 4-50-1330200 7. DOE 8" #2 LARGE+1 2063 8MALL+1 2495 04-50-1320200 8. DOE 3" +1 4-50-1328550 9. FH BCHOOL +1 12976 -1 2029 -1 2480 **■1 33000 -: 15000 ~: 379**9 -1 -: 12889 =1 87000 TOTAL = 1459000 MISSOURI CITIES TOTAL =1228832000 R DIST. #2 24" LINE TO: 6/01/95 FROM: 5/01/95 USAGED

24" EAST 24" WEST ***:** 51415000 +1 2304 BYPASS **-1** 2304 - - 1 WATER DIST. #2 TOTAL =: 51415000

NEW MELLE +: 273159 -: 265819 **■:** 7340000